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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/642,183	08/17/2000	Ramon Alfredo Carvalho Siochi	00 P 7825 US	6407

7590 05/08/2003

Siemens Corporation
Intellectual Property Department
186 Wood Avenue South
Iselin, NJ 08830

EXAMINER
THOMAS, COURTNEY D

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/642,183	SIOCHI, RAMON ALFREDO CARVALHO	
	Examiner	Art Unit	
	Courtney Thomas	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-14* is/are allowed.

6)☒ Claim(s) *1-11 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 August 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-11 and 15 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-18 of copending Application No. 09/642553 in view of Yu (U.S. Patent 5,818,902).

3. As per claims 1-6, Application No. 09/642553 claims a method for delivering radiation to a treatment area comprising the steps of:

4. a) positioning a multi-leaf collimator between a source and a treatment area to block a portion radiation, with leaves of the multi-leaf collimator extending longitudinally along a first axis and being positioned to define a first treatment field;

5. b) delivering radiation to the first treatment field;

6. c) rotating the multi-leaf collimator about a central axis extending generally perpendicular to a plane containing at least a portion of the leaves and positioning the leaves to define a second treatment field and

7. d) delivering radiation to the second treatment field.

8. Application No. 09/642553 does not explicitly claim a method wherein the multi-leaf collimator is moved over an arc over a treatment area while delivering radiation to first and second treatment fields, respectively.

9.

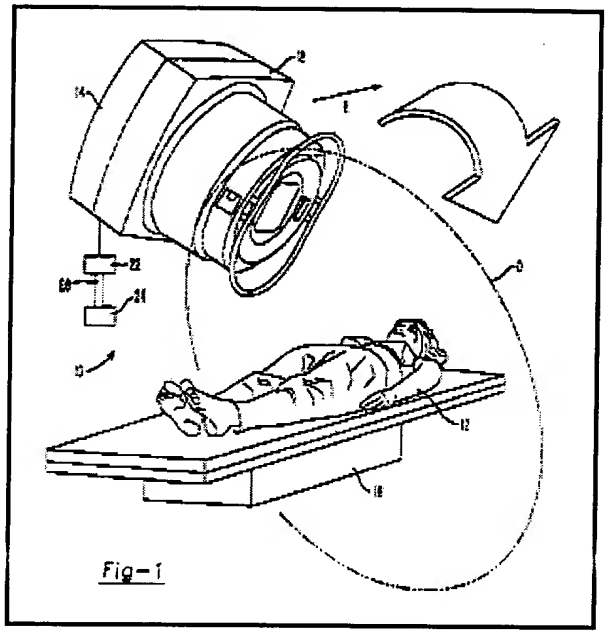

Figure 1 - U.S. Patent 5,818,902 to Yu

10. Yu teaches that arc therapy is a conventional method of administering maximum amounts of radiation to target tissue while minimizing the delivery of radiation to healthy organs surrounding a malady, such as a tumor. Yu also teaches that the changing of treatment fields allows the irradiation of an irregularly shaped, three dimensional area that is also critical in limiting radiation exposure to surrounding healthy tissue (abstract – see also column 2, lines 66-67, column 3, lines1-4).

11. It would have been obvious to modify the method of Application No. 09/642553 such that it incorporated the step of moving a multi-leaf collimator in an arc over a treatment area while delivering radiation to first and second treatment fields, respectively. One would have been

motivated to make such a modification so that radiation is optimized for delivery to an irregularly shaped tumor or the like, while reducing radiation exposure to the surrounding healthy tissue as taught by Yu (abstract, Figs. 1, 1a; column 1, lines 23-67, column 2, lines 1-67, column 3, lines 1-4; column 14, lines 35-67).

12. As per claims 7-11 and 15, Application No. 09/642553 claims a method for delivering radiation to a treatment area comprising the steps of:

13. a) dividing a treatment area into a plurality of cells each having a defined treatment intensity level;

14. b) grouping the cells to form a plurality of matrices, each of the matrices having at least one dimension approximately equal to a width of a collimator leaf;

15. c) decomposing each of the matrices into orthogonal matrices to identify a plurality of treatment fields;

16. d) positioning a multi-leaf collimator between a source and a treatment area to block a portion radiation, with leaves of the multi-leaf collimator extending longitudinally along a first axis and being positioned to define a first treatment field;

17. e) delivering radiation to the first treatment field;

18. f) rotating the multi-leaf collimator about a central axis extending generally perpendicular to a plane containing at least a portion of the leaves and positioning the leaves to define a second treatment field and

19. g) delivering radiation to the second treatment field.

20. Application No. 09/642553 does not explicitly claim a method wherein the multi-leaf collimator is moved over an arc over a treatment area while delivering radiation to first and second treatment fields, respectively.

21. Yu teaches that arc therapy is a conventional method of administering maximum amounts of radiation to target tissue while minimizing the delivery of radiation to healthy organs surrounding a malady, such as a tumor. Yu also teaches that the changing of treatment fields allows the irradiation of an irregularly shaped, three dimensional area that is also critical in limiting radiation exposure to surrounding healthy tissue (abstract – see also column 2, lines 66-67, column 3, lines1-4).

22. It would have been obvious to modify the method of Application No. 09/642553 such that it incorporated the step of moving a multi-leaf collimator in an arc over a treatment area while delivering radiation to first and second treatment fields, respectively. One would have been motivated to make such a modification so that radiation is optimized for delivery to an irregularly shaped tumor or the like, while reducing radiation exposure to the surrounding healthy tissue as taught by Yu (abstract, Figs. 1, 1a; column 1, lines 23-67, column 2, lines 1-67, column 3, lines 1-4; column 14, lines 35-67).

23. This is a provisional obviousness-type double patenting rejection.

Allowable Subject Matter

24. Claims 12-14 are allowed.

25. The following is an examiner's statement of reasons for allowance:

26. As per claim 12 and dependent claims 13-14, the examiner found no reference in the prior art that disclosed or made obvious a system comprising a collimator operable to rotate

about a central axis of a radiation beam emitted from a radiation source and a controller configured to rotate the collimator about a central axis.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

28.

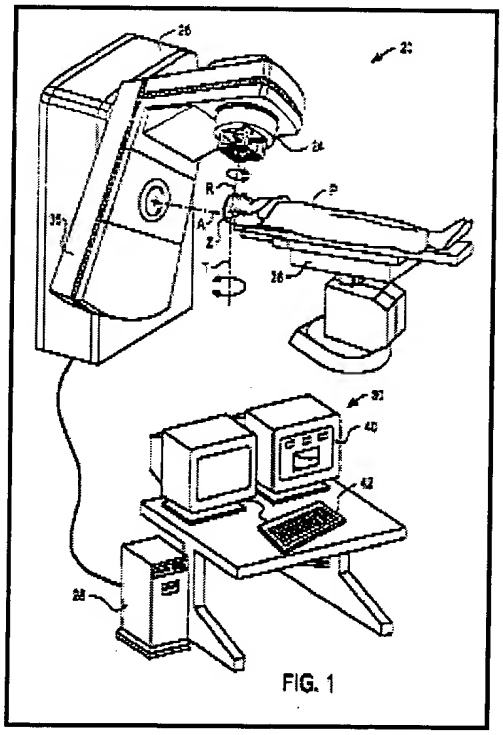

Figure 1 - U.S. Patents 6,330,300 B1and 6,449,335 B1 to Siochi - Assignee: Siemens Medical Solutions USA, filed 08.23.00 respectively

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (703) 306-0473. The examiner can normally be reached on M - F (9 am - 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305 3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0530.

DAVID V. BRUCE
PRIMARY EXAMINER

Courtney Thomas

May 1, 2003